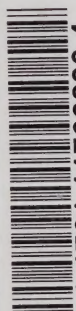




Surveys, Mapping and
Remote Sensing Sector

Secteur des levés, de la
cartographie et de la télédétection

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CONTRACTING-OUT BULLETIN
for
THE PRIVATE SECTOR

PLANS FOR 1994-95



Energy, Mines and
Resources Canada

Énergie, Mines et
Ressources Canada

Canada

THE ENERGY OF OUR RESOURCES · THE POWER OF OUR IDEAS

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Surveys, Mapping and
Remote Sensing Sector

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cartographie et de la télédétection

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for
THE PRIVATE SECTOR

PLANS FOR 1994-95



Prepared by

**The Office of External Relations
Surveys, Mapping and Remote Sensing Sector
Natural Resources Canada**

March 1994



Préparé par

The Office of External Relations
Surveys, Mapping and Remote Sensing Sector
Natural Resources Canada
March 1994

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FOREWORD

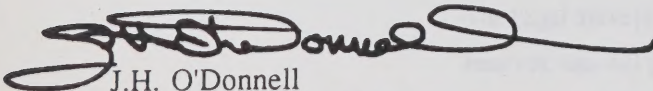
I am pleased to present the fifth annual *Contracting-Out Bulletin* of the Surveys, Mapping and Remote Sensing Sector (SMRSS).

In addition to our responsibilities for surveying, mapping and remote sensing, this Sector is committed to assisting the development of the Canadian geomatics industry by supporting new technologies and applications in geomatics.


This annual bulletin is published in a spirit of information-sharing. As well, the intent is to encourage continued cooperation with our private sector partners and our clients. My staff and I look forward to further improving the services to our clientele and to closer cooperation and coordination with the Canadian geomatics community.

The figures in this bulletin are estimates of budget allocations and projects anticipated in the 1994-95 fiscal year. These estimates may be reduced by budget cuts or may be increased by surveying contracts that could be approved by Parliament early in the fiscal year. For instance, the present estimates exclude an additional \$2.5 million that may be approved by Parliament for surveys related to native land claim settlements.

Please address your comments, suggestions, or requests to be placed on this bulletin's mailing list to the Office of External Relations, listed under "Contacts" on the last page of this bulletin.



J.H. O'Donnell
Assistant Deputy Minister



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Surveys, Mapping and Remote Sensing Sector

The Organization

The Surveys, Mapping and Remote Sensing Sector (SMRSS) is responsible for national geodetic surveys, cadastral surveys on Canada Lands, the maintenance of the International Boundary, the preparation and distribution of topographic, geographic, and electoral maps, aeronautical charts, and related digital files, and for the acquisition and use of remote sensing data. The Sector is now divided into seven responsibility centres that practise the disciplines associated with geographic information services.

They are:

- The Geodetic Survey Division (GSD)
- The Legal Surveys Division (LSD)
- The Canada Centre for Mapping (CCM)
- The Canada Centre for Geomatics (CCG) in Sherbrooke
- The Geographic Information Systems Division (GISD)
- The Policy, Planning and Services Centre (PPSC)
- The Canada Centre for Remote Sensing (CCRS)

To maintain comparability with the previous years' bulletins, these responsibility centres have again been grouped in this bulletin under five types of activity.

Surveying

Surveying is undertaken by two divisions: the Geodetic Survey Division (GSD) and the Legal Surveys Division (LSD), which includes the International Boundary Commission (IBC). The Geodetic Survey Division establishes and maintains the national geodetic networks and maintains a national data base of geodetic information. The Legal Surveys Division manages all cadastral surveys on Canada Lands (Indian reserves, national parks and historic sites and all Crown Canada Lands in the territories and the offshore). The International Boundary Commission maintains the boundary between Canada and the United States.

Mapping

The mapping of Canada is undertaken in support of economic development and sovereignty. Two organizational units are involved: the Canada Centre for Mapping and the Canada Centre for Geomatics. The mapping activity provides national standards in topographic and geographic mapping and aeronautical charts. It manages the production and maintenance of maps of the National Topographic System and its related computer data base as well as geographic maps, the National Atlas, geographical names publications, electoral maps, and aeronautical charts. The mapping activity also includes associated research and development.

Geographic Information Systems

The Geographic Information Systems Division is responsible for the development and application of GIS technology, the promotion of data, products and services of the Surveys, Mapping and Remote Sensing Sector, and the promotion of Canadian industry. The Division fosters cooperation at the national and international levels among public, private and academic organisations in support of the development of GIS and the promotion of applications.

Policy, Planning and Services

The Policy, Planning and Services Centre (PPSC) performs many corporate functions. Among them are coordinating the Sector's activities, including those involving domestic and international relations; providing the Sector's strategic planning services; and, managing the reproduction and distribution of the Sector's maps, charts, and air photographs, as well as marketing cartographic products in digital and analogue video formats.

Remote Sensing

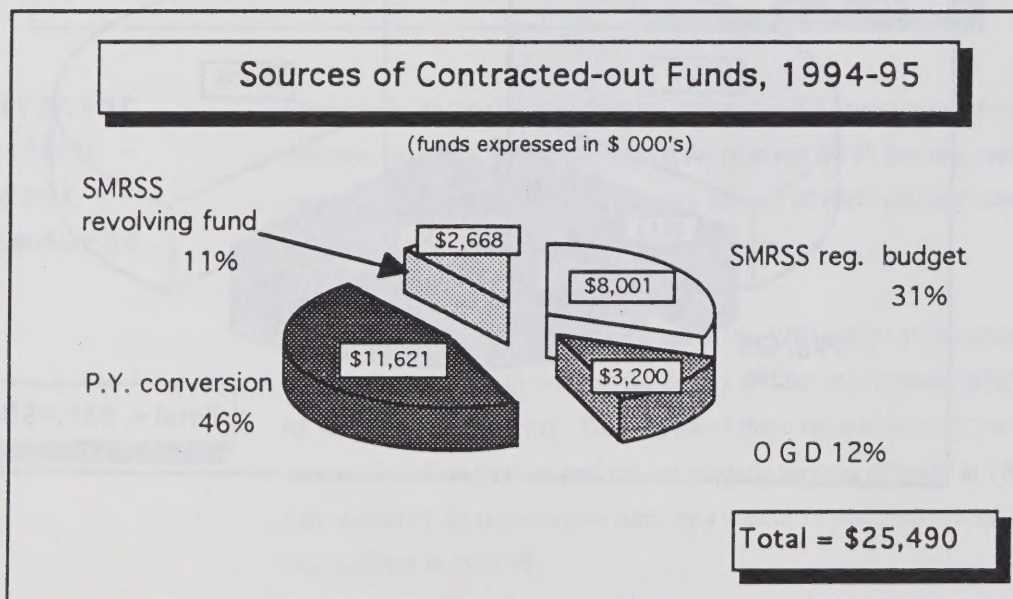
The Canada Centre for Remote Sensing (CCRS) is responsible for the planning, development and implementation of a national program for the acquisition of remote sensing data of the country's inland and offshore areas, for use by environmental and natural resource managers in the public and private sectors. Resource management and environmental issues are two of the Centre's main areas of research, including the monitoring and development of technology.

Contracting-Out Plan: An Overview

A contracting-out plan for the former Surveys and Mapping Branch was approved by Treasury Board in 1977, amended in 1983, temporarily suspended in 1984 and reinstated in 1988 for the new Surveys, Mapping and Remote Sensing Sector. The plan calls for a reduction of person-years and the conversion of that salary funding to contracting-out funds. The total value of the Sector's contracting-out program over a six-year period beginning in 1991-92 was estimated at \$159,627,000¹. This amount included \$75,543,000 in contracting-out funds for the plan negotiated with Treasury Board in lieu of person-years. While budget reductions have been imposed by Treasury Board, the losses to the contracting-out plans have been successfully compensated by additional revenues generated by SMRSS.

The chart below shows the \$25,490,000 earmarked for contracting out by SMRSS responsibility centres in 1994-95, from the following four sources:

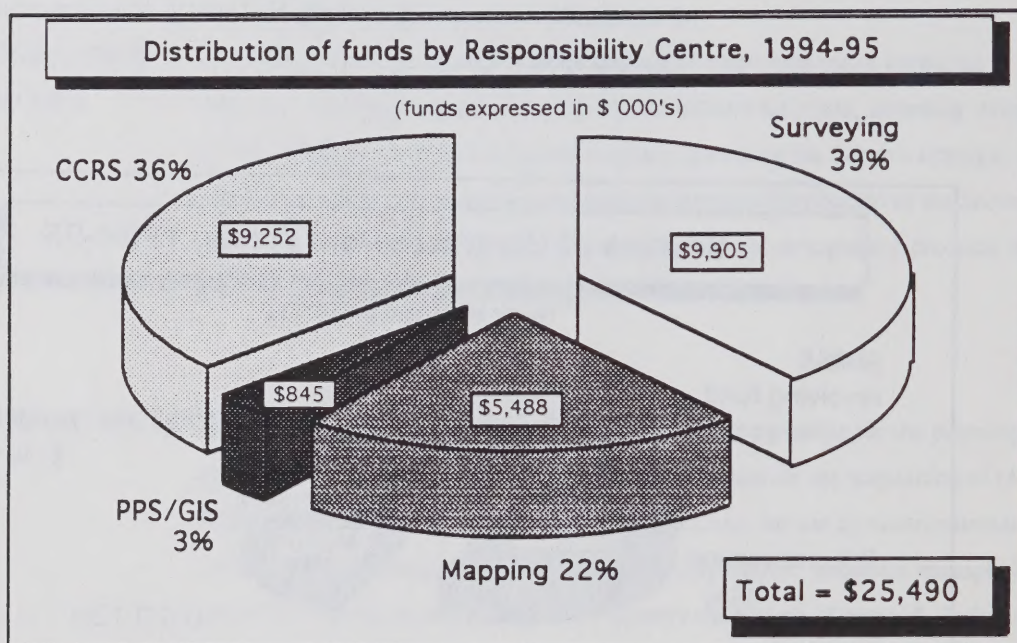
- (1) \$8,001,000 from the Sector's regular budget;
- (2) \$3,200,000 from other federal government departments (mainly for legal surveys);
- (3) \$11,621,000 from the conversion of person-years; and
- (4) \$2,668,000 from a special revolving fund used to develop revenue generating products and services.



¹ (a) Assuming a constant inflation rate of 5% and no Treasury Board budget reductions;
 (b) For the years beyond 1991-92, much of the contracting out for Legal Surveys Division depends on the settling of native land claims.

The sum of \$25,490,000, for which detailed plans are presented in this document, represents the known estimate of the funds to be committed this year. It does not include a possible additional \$2,500,000, which may be approved by Parliament for surveying native land claims.

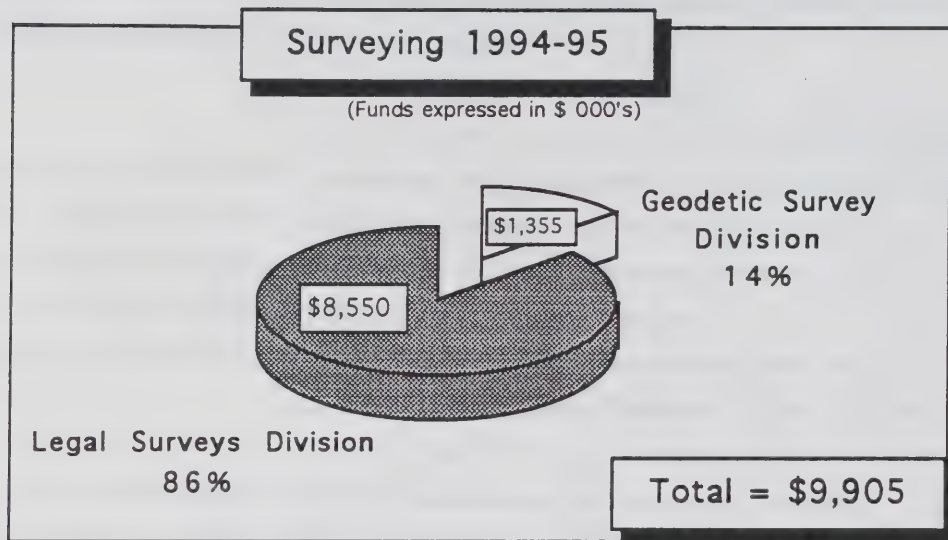
The chart below displays the distribution of contract funds among the four major types of activities within SMRSS.



SURVEYING

Overview

The figure below illustrates the summary of budgeted contract expenditures for surveying in 1994-95.



Contractor Selection - General Procedures

Contracts let by the Geodetic Survey Division for field surveys or for research and development are of two types: request for proposal (RFP) and sole source. Most contracts are of the RFP type, although a number of R&D contracts have been sole-sourced because of an identified, unique expertise.

An accreditation scheme was introduced in late 1990 and involves periodic visits by an accreditation team to firms on the Supply and Services Canada (SSC) vendor list for vertical control surveys. The purpose of these visits is to verify the technical competency of the firms to perform the geodetic services offered. In 1993, six firms were visited by the accreditation team for a total of 51 accredited so far. The program will continue in 1994-95.

A questionnaire will be sent to all firms now on the Supply and Services Canada vendor list for geodetic services, to confirm their interest in remaining on the vendor list.

Except for comprehensive native land claims (i.e., NTI and CYI) surveys, which are let through the RFP process, the bulk of the survey contracts let in the regions by the Legal Surveys Division are awarded on a rotational basis. That is, lists of eligible land surveyors are maintained in each region, and a new contract is awarded to the next surveyor on the list. These contracts average about \$10,000 in value, and do not normally exceed \$25,000.

Departmental authority has been granted to Regional Surveyors to use the sole-source method on a rotational basis, for contracts valued up to \$30,000. For those valued between \$30,000 and \$50,000, a multiple-quote approach is being used. The regional surveyors review quotes from at least three firms on the eligible list. For those valued at over \$50,000, the contract will be let through Supply and Services Canada, via the RFP route.

Strategic Plan

The Sector has compiled a transitional business plan in preparation of becoming a Special Operating Agency (SOA). Some of the planning aspects relevant to surveying are listed below.

- Geodetic Survey will continue a comprehensive program to bring primary geodetic control from inaccessible locations to more useful ones. This will involve the establishment of GPS positions on selected bench marks, at locations accessible by road, throughout Canada. The program was contracted first in 1990-91 and contracting will continue in 1994-95. It is expected to be completed in the late 1990s.
- Geodetic Survey, in partnership with industry, will develop a commercially viable Differential Global Positioning System (CDGPS - a component of the Canadian Active Control System) service to satisfy the needs of federal government and private sector clients. Regional support will be provided through cooperation with provincial survey agencies and industry.

- New EDM calibration baselines continue to be constructed in the provinces at the rate of one or two per year. Some calibration baselines are being extended into six to eight station calibration basenets, to support the growing use of GPS methods. The first basenets were measured in 1989-90 by Sector personnel, in cooperation with provincial surveying and mapping agencies. There are now nine such basenets. At least two basenets will be added in 1994-95.
- The requirements for high-precision surveys to monitor crustal movements are expected to continue.
- Additional research contracts are anticipated in the development of the following: the DTEM/altimetry/geoid, the modern Canadian Spatial Reference System (CSRS), the National Geodetic Information System (NGIS), on a continuing basis, and the Automated Canada Lands Information System.
- Levelling contracts will continue at a reduced level from 1993-94. The levelling requirements now consist of maintenance and extension of the vertical control networks. A study is currently underway to determine the extent of the vertical control network that must be maintained in future.
- The establishment of a high-precision network to complement ACS development and to meet users' increasing accuracy needs is being developed in partnership with provincial agencies. Work will begin in the Maritimes and in Quebec this year.
- In 1990-91, additional resources for the Legal Surveys Division were obtained from Treasury Board and from within the Department. These were required in view of the increased workload of the Division and the need to revitalize the Canada Lands Surveys System. Some \$1.0 million of these additional funds were expended on contracts in 1993-94, and this level of funding is expected to continue or increase slightly in FY 1994-95.
- It is estimated that the population of native peoples will double over the next 20 years, placing even greater demands on the services of the Legal Surveys Division.

- A draft of the revised *Manual of Instructions for the Survey of Canada Lands* was prepared in 1993-94. The revised manual, including updated standards, is scheduled for publication in 1994-95.

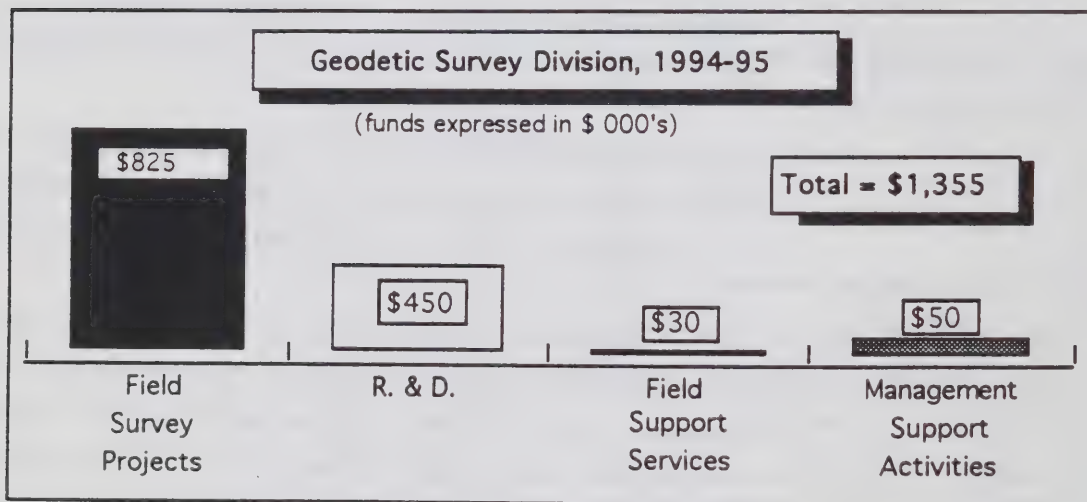
Comprehensive Native Land Claims

A considerable increase in the Legal Surveys workload is expected during the next 10 to 15 years. This is due to the surveys required for comprehensive native land claims settlements. The bulk of this survey work will be contracted. Funding for Sahtu and CYI (Council of Yukon Indians) land claims is expected to start in 1994-95, while funding for the Gwich'in claims started in 1992-93 and for Nunavut Tungavik Incorporated (NTI), in 1993-94.

GEODETIC SURVEY DIVISION (GSD)

Overview

The chart below illustrates the estimated contract values in the four main areas of activity of the Geodetic Survey Division (GSD) for 1994-95.



Research and Development 1994-95

A number of research projects have been identified as possibilities for a share of the approximately \$450,000 to be allotted to contracting in 1994-95. On the following page is a list of the identified projects.

Project	Description
Development of GPS Active Control System	The work will concentrate on the enhancement of GPS data acquisition, processing and communication capabilities. It will include software and technology development to facilitate differential GPS and user positioning application interfaces.
Improvement of Geoid and Satellite Altimetry Data Applications	Work will include development of software and a data base for improved geoid determination across Canada, and implementation of techniques for use of DTEM and satellite altimetry data in geoid determinations and topographic profiling.
Establishment of VLBI Fiducial Sites	Development of a geodetic VLBI system to facilitate regular observations between Algonquin and Yellowknife; commence assembly of a 3 m transportable field VLBI system to provide reference framework ties at selected ACS sites.
Development of Geometrical Deformation Monitoring Capability	Monitoring and analysis of regional and local high-precision geodetic networks provide important information on monument stability, and local and regional crustal deformations due to natural and/or people-induced causes. The geometrical analysis is based on repeated observations to detect displacements. The new methodology will improve precision of survey results and facilitate new application of geodetic techniques to studies of natural hazards and environmental change.
Robustness Analysis	Consulting to support development of data analysis methods.

Field Surveys 1994-95

Project	Description
Bench Marks across Canada	Bench mark installation in central Alberta and northern Saskatchewan - 2000 kilometres; and in southern Saskatchewan and British Columbia - 2350 kilometres.
Levelling in Ontario	First order levelling along the Trans Canada Highway (2 projects) - 1240 kilometres; and North Bay to Smooth Rock Falls - 450 kilometres.
GPS on Bench Marks - Quebec	GPS observations on bench marks at about 74 stations in northern Quebec.

Support of Management Activities

On occasion, contracts are let to support planning, business process re-engineering and other administrative activities, including TQM training. These services will continue in 1994-95, and the total cost is estimated at \$50,000.

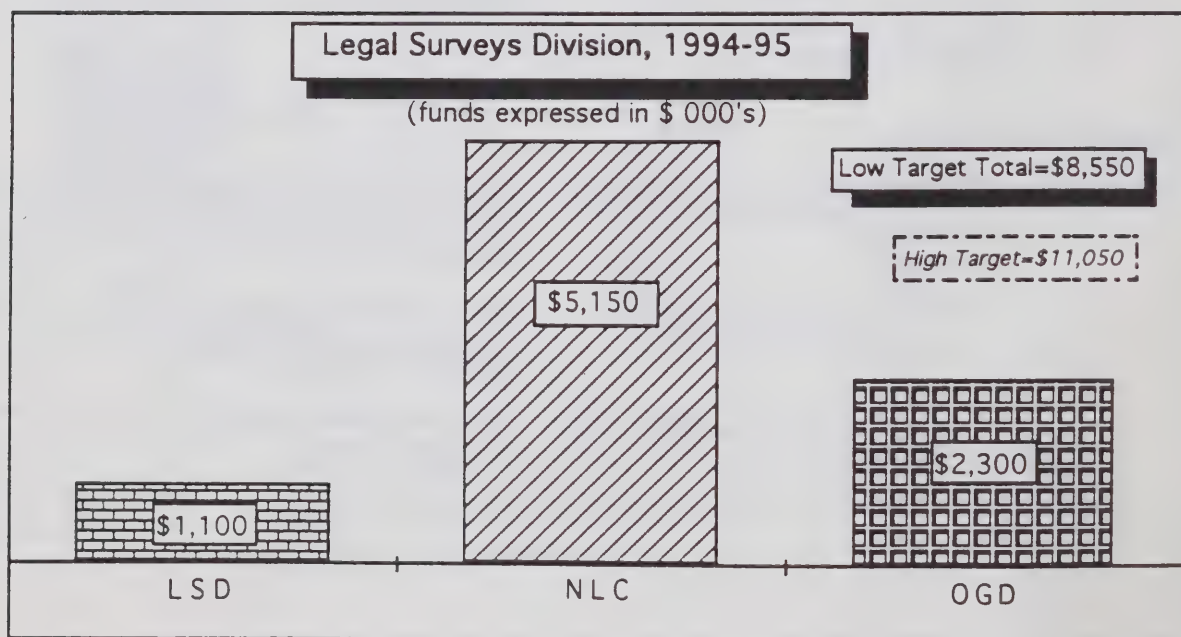
Support of Field Activities

A number of contracts are let to support in-house activities. These include rentals of survey equipment (notably GPS receivers), aircraft leases, etc. The total contracted-out expenditure in 1993-94 amounted to \$35,000. The 1994-95 forecast is that the value of contracts will be approximately \$30,000.

LEGAL SURVEYS DIVISION (LSD)

Overview

The chart below shows the estimated field surveys and mapping contract values planned to be awarded by the Legal Surveys Division (LSD) for 1994-95, according to the three main sources of funding: other government departments (OGD), Native Land Claims (NLCs) which include the Inuvialuit Final Agreement (IFA), the Nunavut Tungavik Incorporated (NTI) and Gwich'in [the high target includes the Sahtu and the Council of Yukon Indians (CYI)], and finally, the Legal Surveys Division's own operational budget, which includes that of the International Boundary Commission (IBC).



Field Surveys and Mapping 1994-95

All of the Legal Surveys Division field surveys and mapping projects are contracted to the private sector. These include contracts for mapping, for Regional Surveyor Plans (RSP) and for conventional cadastral surveys. Funds for this year's projects will come from the Department of Indian and Northern Affairs, Environment Canada and from the Legal Surveys Division. It is expected that about the same number of small contracts for mapping (17), Regional Surveyor Plans (12), and conventional surveys (257) as were let in the current year will again be let in the regions in 1994-95. These will also include the preparation of existing survey data for loading into the Automated Canada Lands Information System (ACLIS).

Native Land Claim Settlements 1994-95

Surveys for the Native land claims settlements are administered and managed by the Legal Surveys Division. Funding for these projects comes from special allotments that are not included in the regular operating budget of the Legal Surveys Division. In 1994-95, it is expected that special allotments totalling about \$7,650,000 will be authorized by the Government of Canada for contracting surveys related to land claim settlements (high target).

Contracts valued at \$0.4M for the IFA, \$3.55M for the NTI and \$1.2M for the Gwich'in land claims will definitely be let in 1994-95 (low target). This will be the last year for surveying for the IFA, the third year of a five-year program for the Gwich'in land claim and the second year of a ten-year program for the NTI.

Both the Sahtu and the CYI land claims are expected to be approved by Parliament in 1994-95. If they are approved, contracts valued at \$1.1M for the Sahtu and \$1.4M for the CYI will be let in 1994-95. These are five and ten-year programs respectively and the funds available for contracts will increase in the second and subsequent years. If they are not approved by Parliament early in the fiscal year, these contracts (\$2.5M) will have to be rescheduled for a later date.

There are also other claims, both comprehensive and specific, which will probably start during the next several years, but it is too early to quote specifics at this time.

INTERNATIONAL BOUNDARY COMMISSION (IBC)

Field Surveys 1994-95

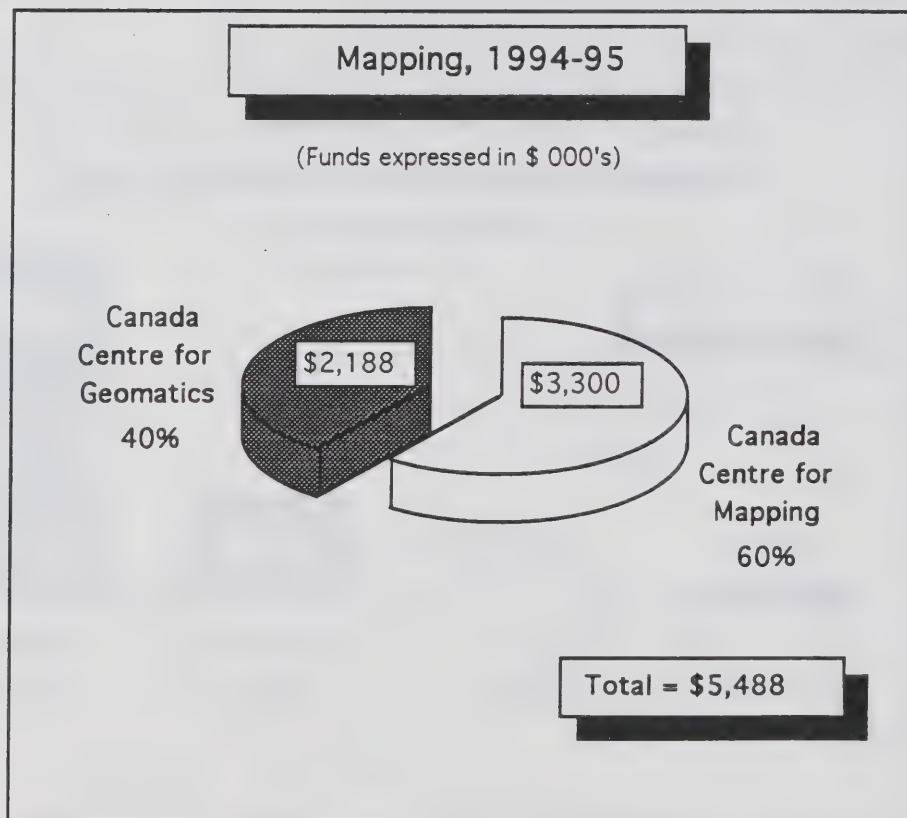
The work of the International Boundary Commission, that of maintaining, surveying, and regulating the International Boundary between Canada and the United States, is governed by a treaty between the two countries. Responsibility for the boundary is jointly held by the Canadian and U.S. Sections. No geomatics-related contracts are expected to be let this year by the IBC.

Mapping

Overview

The Canada Centre for Mapping (CCM) in Ottawa and the Canada Centre for Geomatics (CCG) in Sherbrooke, carry out the mandate for mapping in Canada.

The following chart shows a summary of budgeted contract expenditures for mapping in 1994-95.

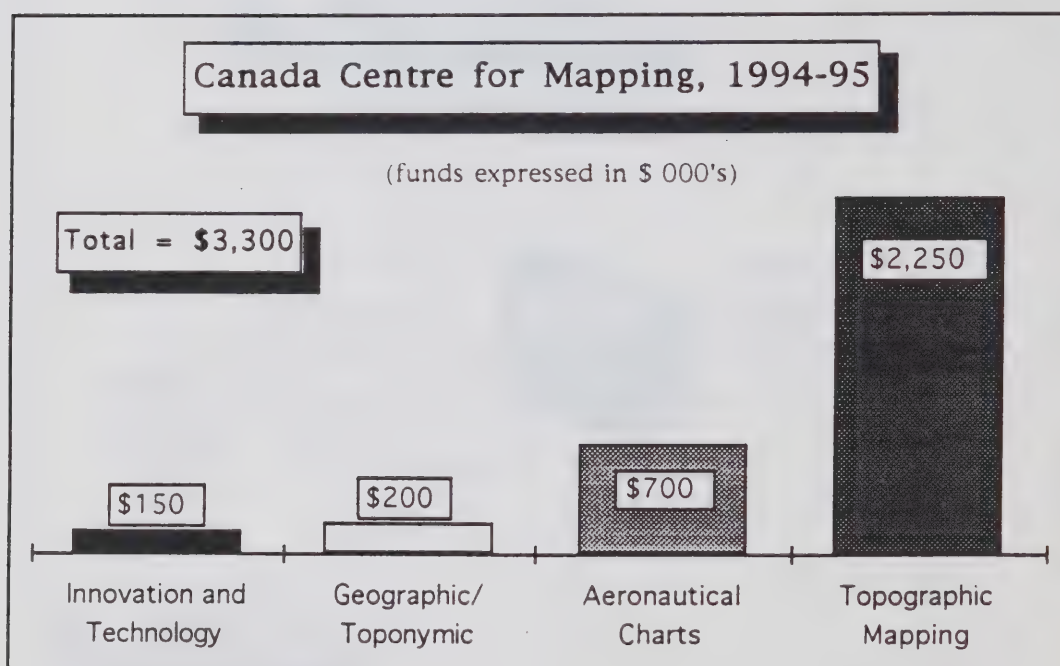


Canada Centre for Mapping (CCM)

Overview

The Canada Centre for Mapping provides national standards in topographic and geographic mapping and for aeronautical charts. It manages the production and maintenance of maps of the National Topographic System and its related computer data base as well as geographic maps, the National Atlas, geographical names publications and aeronautical charts. The mapping activities also include associated research and development.

The figure below shows the estimated contract values in the four main areas of activity of the Canada Centre for Mapping for 1994-5.



Activities	Values
Innovation and Technology	\$150,000
Geographic/Toponymic	\$200,000
Aeronautical Charts	\$700,000
Topographic Mapping	\$2,250,000
Total CCM	\$3,300,000

Innovation and Technology 1994-1995

In 1994-95, it is anticipated that \$150,000 will be available for contracting-out for Applied Research and Technology activities.

Activities

- Dynamic mapping (multimedia, hypermedia and visualization)
- Analytical mapping (new types thematic maps based on spatial statistical analysis techniques)
- Change detection and representation
- Cartographic expert systems
- Use of networks for the dissemination of cartographic and spatial information

Geographical Maps and Information 1994-1995

In 1994-95 it is anticipated that about \$100,000 will be available for contracting-out for the production of geographical maps and information. The following is a list of activities where specific procurements may be required.

Activities

National Atlas

- General Geographical Research
- Value-added Projects

Toponymic Information 1994-1995

In 1994-95, it is anticipated that about \$100,000 will be available for contracting-out for toponymic information activities. The following is a list of potential activities where specific procurements will be required.

Activities

- | | |
|---------------------------|----------------|
| Canadian Permanent | • Publishing |
| Committee on | • Consultation |
| Geographical Names | |

- | | |
|------------------------------|-------------------|
| Canadian Geographical | • Data Collection |
| Names | |
| Data Base | |

Aeronautical Charts and Information Publications 1994-1995

In 1994-95, it is anticipated that about \$700,000 will be available for contracting-out for aeronautical charts and information publishing activities. The following is a list of potential activities where specific procurements may be required.

Activities

- Aeronautical Publications
- Conversion of Aeronautical Charts
- Geomatics Training
- Data Collection and Verification

Topographic Mapping 1994-1995

In 1994-95, it is anticipated that about \$2,250,000 will be available for contracting out mapping at the scales of 1:50 000, 1:100 000 and 1:250 000.

Activities

- | | |
|---------------------------------|-----------|
| • Aerial Photographs | \$350,000 |
| • New Mapping | |
| - Northern Image Maps 1:100 000 | \$200,000 |
| • Map Revision 1:50 000 | \$900,000 |
| • Cartographic Editing 1:50 000 | \$400,000 |
| • Map Revision 1:250 000 | \$400,000 |

CANADA CENTRE FOR GEOMATICS (CCG)

Overview

The Canada Centre for Geomatics (CCG) is in charge of the acquisition and updating of the information contained in the National Topographic Data Base.

CCG awarded contracts valued at \$2,014,000 in 1993-94, and has transferred \$936,000 that was unused to the present fiscal year. This transfer brings the total planned for contracting out in 1994-95 to \$2,188,600.

Contracting Procedure

The procedure for awarding contracts, introduced in 1993-94, has been used successfully by CCG. In the context of the changing status of SMRSS, which will become a Special Operating Agency, CCG is negotiating the possibility of raising the current ceiling for contracts over and above \$2500.

1994-95 Activities

During the 1994-95 fiscal year, CCG plans to have 1200 new files produced for the National Topographic Data Base, of which 100 will be at the scale of 1:250 000 and the rest at the 1:50 000 scale.

Most of the contracts (90%) will be awarded for scanning.

Revision activities based on SPOT imagery will begin this year instead of last. Contracts for orthoimage production should be available by spring. Updating should begin in the summer. Some 50 files will be produced.

Qualification tests for revising NTDB data began at the end of 1993. These tests are permanently open to any firm interested in qualifying.

Geographic Information Systems

Overview

The Geographic Information Systems Division is responsible for the development and application of GIS technology, the promotion of data, products and services of the Surveys, Mapping and Remote Sensing Sector and the promotion of Canadian industry. The Division carries out these responsibilities through a series of activities related to the following programs and services:

- **GIS Technology Development and Applications:** The Division develops applications to promote the use of Sector data and data bases within the National GIS Technology Centre. As well, the Division promotes and conducts research and development leading to improved Canadian GIS technology.
- **Coordination of GIS-related activities:** The Division performs the necessary technical functions for the coordination of GIS-related activities in the federal government, through the Inter-Agency Committee on Geomatics (IACG). The Division also develops long-term objectives and strategies on GIS matters for the Sector.
- **Technology Transfer:** The Division develops training and education in GIS for professionals in the federal government and the private sector.
- **Promotion:** The Division promotes Canadian GIS technology and GIS expertise both nationally and internationally.

The estimated GIS Division contracting-out budget for the 1994-95 fiscal year is \$250,000. This may well be matched by equal funds from the provinces or from other federal government departments, for application projects by industry.

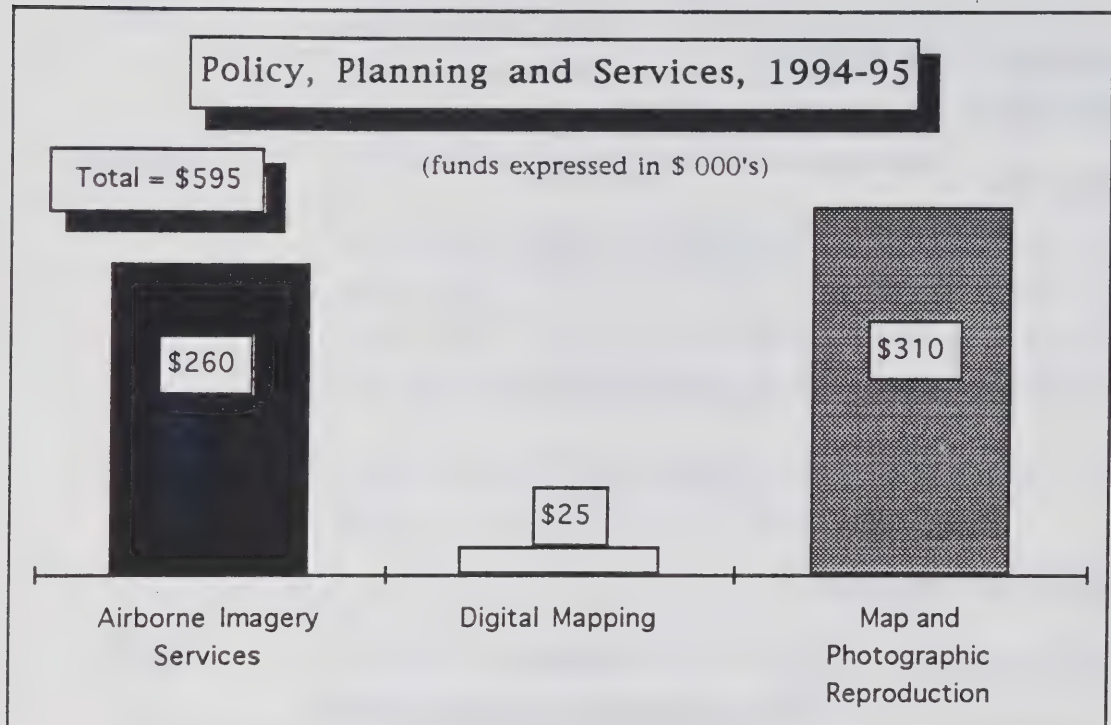
Projects 1994-95

- Development of GIS applications in support of projects for the promotion of SMRSS data.
- Research and development in the area of data federation and metadata browsing.

Policy, Planning and Services

Overview

The chart below illustrates the estimated contract values in the three main areas of activity of the Policy, Planning and Services Centre for 1994-95.



Map and Photographic Reproduction

1994-95

Activities

(\$000's)

Photographic Reduction. Reduce standard N.T.S. negatives 30" by 36", four times on high-quality resolution film.

10

1994-95 cont'd

Activities

(\$000's)

Photo-Mechanical Services.

300

- Contact printing
- Colour proofs
- Peel coats
- Etch scribes
- Camera

Phototype

0

Sub-total

\$310

**Airborne Imagery
Services**

1994-95

Activities

(\$000's)

The photographic imagery (prints) and
mosaics from aerial negatives

\$260

- Black and white contact prints
- Photographic mosaics and
enlargements on photographic paper
- Uncorrected and corrected
diapositives on stable base

Digital Mapping

1994-95

Activities

(\$000's)

Reproduction and duplication of
digital maps on 9-track magnetic tape
in the same medium and onto
CD-ROM and floppy disk.

\$25

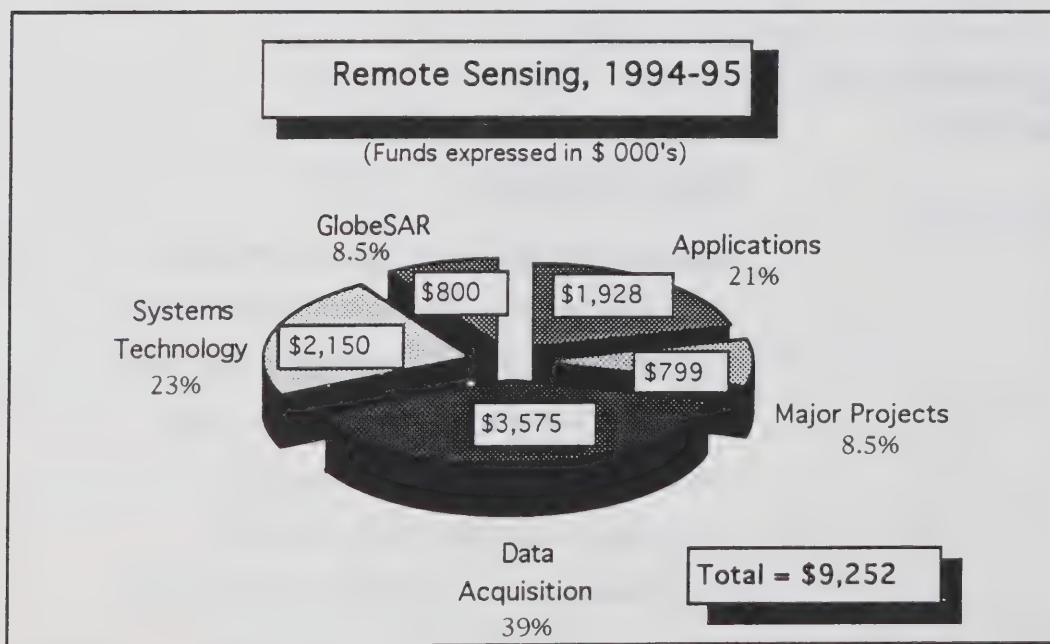
Remote Sensing

Overview

The contracts awarded by the Canada Centre for Remote Sensing (CCRS), a research organization involved in long-term research, tend to be for several years, are highly specialized, and may vary from what is listed here, depending on developments in current projects. CCRS does not have what might be considered production contracts whose net result is a specific number of products. Virtually all contracts are placed through Supply and Services Canada (SSC). The list below does not include contracts for purchasing off-the-shelf hardware and software.

The GlobeSAR project was approved last year, and close to \$2 million were expended on the program in the 1993-94 fiscal year. In 1994-95, it is estimated that \$0.8 million will be contracted to the private sector under the GlobeSAR project. This will cover scientific research contracts, Radarsat simulations and training activities.

The Canada Centre for Remote Sensing has forecasted contracting-out expenditures of \$9,252,000 for the 1994-95 fiscal year, including GlobeSAR.



Major Projects Office

1994-95

Project Description

Preparation of CD-ROMs continues. Sample data sets and training materials related to the use of SAR imagery in various applications are being developed. Various contractors are being used.

Provision of research support for development of knowledge-based methods. Contract in force.

Provision of research support for scene physics and analysis. Contract in force.

Enhancements to various commercial image analysis systems to handle SAR imagery more effectively. Contract in effect, additional proposals are expected.

Preparation of materials demonstrating use of SAR in forest applications. Contract in effect.

Development of capability to extract topographic information from RADARSAT stereo data sets. Contract in effect.

Preparation of integrated geological data set for the Province of Nova Scotia. Phase I contract in effect, expect to proceed to phase II.

Development of the prototype Project-Oriented Information System to manage the various metadata encountered with typical projects in which remotely sensed data is one of many data sources. Contract in effect.

Applications Division

1994-95

Project Description

Hydrology/agriculture and geology radar applications development. Contract in force.

International applications development. Contract in force.

Environmental monitoring and modelling. Contract in force.

Forestry applications development. Contract in force.

Oceans applications development. Contract in force.

Ice applications development. Contract in force.

Cartography applications development. Contract in force.

Data Acquisition Division

1994-95

Project Description

Operation and maintenance of a Crown-owned Convair CV-580 aircraft and marketing of radar data acquisition services. Present contract expires December 31, 1995.

Data acquisition of electro-optical and related data. Contract expiring on March 31, 1994. New proposals are expected to be forwarded in 1994-95.

Operational support contract for two satellite receiving stations and archiving of satellite data. Three contracts in effect.

Contract for marketing, sale, generation and distribution of satellite products. Contract in effect.

Support for radar applications research. Contract in effect until March 1996.

Operational support contract for processing of ERS-1 synthetic aperture radar data at the Gatineau Satellite Station. Contract in effect until July 31, 1994.

Polarimetric SAR study. Contract in process.

SAR PCU modifications. Contract in effect.

DT SAR Processor. Contract in effect until 31 May, 1994.

Systems Technology Division

1994-95

Project Description

Procurement of FastScan, a real-time moving window, quicklook and transcription system for Radarsat data.

Development of personal computer-based and workstation-based SAR processors for Radarsat and other data.

Completion of a remote sensing image analysis software package in the Windows-NT environment.

Completion of a image format exchange system for remotely-sensed data.

Development of topographic error correction system for Radarsat SAR data.

Procurement of software and hardware to access and manage Global Change and other environmental data.

Procurement of land information network technology for SMRSS geodetic data.

Development of data access, browse and delivery technology for remotely sensed data.

Operational support contracts for the generation of remote sensing products.

Operational support contracts for informatics and geomatics services.

LIST OF CONTACTS

AREA OF RESPONSIBILITY	CONTACT	ADDRESS	TELEPHONE/FAX
Surveys, Mapping and Remote Sensing Sector	J. H. O'Donnell Assistant Deputy Minister	10th Floor 580 Booth Street Ottawa, Ontario K1A 0E4	Tel: (613) 995-4449 Fax: (613) 995-0842
Legal Surveys Division	G. Raymond Surveyor General and Director	Room 555 615 Booth Street Ottawa, Ontario K1A 0E9	Tel: (613) 995-4341 Fax: (613) 995-9191
International Boundary Commission	S. Jacques Commissioner	Room 130 615 Booth Street Ottawa, Ontario K1A 0E4	Tel: (613) 995-4951 Fax: (613) 947-1337
Geodetic Survey Division	J.D. Boal Dominion Geodesist and Director	Room 426 615 Booth Street Ottawa, Ontario K1A 0E9	Tel: (613) 995-4282 Fax: (613) 995-3215
Canada Centre for Mapping	D. Carney Director	Room 513 615 Booth Street Ottawa, Ontario K1A 0E9	Tel: (613) 995-4643 Fax: (613) 995-8737
Canada Centre for Geomatics	R. Gareau Director	2144 King Street West Sherbrooke, Quebec. J1J 2E8	Tel: (819) 564-5604 Fax: (819) 564-5698
Geographic Information Systems Division	M. Allam Acting Director	Room 751 615 Booth Street Ottawa, Ontario K1A 0E9	Tel: (613) 996-2810 Fax: (613) 952-0916
Policy, Planning and Services Centre	E. Shaw Director General	10th Floor 580 Booth Street Ottawa, Ontario K1A 0E4	Tel: (613) 996-9551 Fax: (613) 943-8838
Canada Centre for Remote Sensing	L. Sayn-Wittgenstein Director General	Room 325 588 Booth Street Ottawa, Ontario K1A 0Y7	Tel: (613) 947-1222 Fax: (613) 947-1382
Office of External Relations	R. Batterham Director	10th Floor 580 Booth Street Ottawa, Ontario K1A 0E4	Tel: (613) 996-5971 Fax: (613) 943-8838

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The Surveys, Mapping and Remote Sensing Sector of the Department of Energy, Mines and Resources:

- Provides a reliable system of surveys, maps, remotely sensed data and geographically referenced information covering the Canadian landmass, in support of national sovereignty, defence, the environment, socio-economic development and the governing of Canada.
- Promotes the development of surveying, mapping, remote sensing and geographic information system technology.
- Fosters the growth of related expertise in both the public and private sectors and contributes to the development of the Canadian economy and international trade.

Le Secteur des levés, de la cartographie et de la télédétection du ministère de l'Énergie, des Mines et des Ressources:

- Fournit un ensemble sûr de levés, de cartes, de données de télédétection et d'information à référence géographique sur la masse continentale canadienne, à l'appui de la souveraineté nationale, de la défense, de la protection de l'environnement, de la croissance socio-économique et de l'administration du pays.
- Favorise le perfectionnement des levés, de la cartographie, de la télédétection et des systèmes d'information géographique.
- Encourage l'enrichissement des connaissances spécialisées des secteurs public et privé dans le domaine et contribue à la croissance de l'économie et des échanges commerciaux du Canada.